

# Utah Department of Transportation Traffic Management Division

September 2016  
Monthly Report



2060 South 2760 West Salt Lake City, Utah 84104 801-887-3710 [www.udottraffic.utah.gov](http://www.udottraffic.utah.gov)

## Mission of the Traffic Management Division

- To Support UDOT and the Department of Public Safety to Achieve Zero Fatalities.
- To Help Provide Reliable and Efficient Travel Throughout Utah.
- To Provide Useful and Timely Real-time Traffic Information.
- To Work Together with Other Government Agencies to Serve the Public.
- To Provide Excellent Customer Service.

## Traffic Operations Center



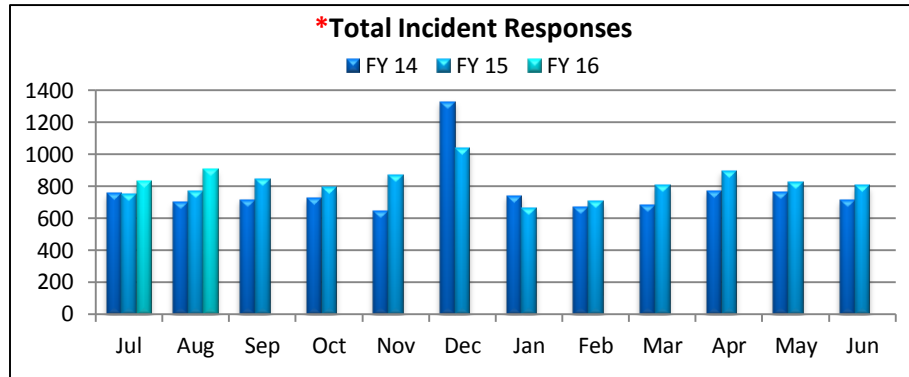
## Field Devices Summary

Freeway PTZ Cameras	393
Surface Street PTZ Cameras	482
RWIS & Contracted Weather Cameras	215
Viewable Detection Cameras	41
Total Cameras	1,131
Freeway VMS	100
Surface Street VMS	57
Portable TOC VMS	7
Legacy Trucks Prohibited VMS	21
Variable Speed Limit VMS	15
Chain-Up / Avalanche Warning Signs	24
Total VMS	224
HAR (27 permanent/5 portable)	32
RWIS	100
Ramp Meters	66
TMS	574
Express Lane Plazas	73
Traffic Signals	1,758

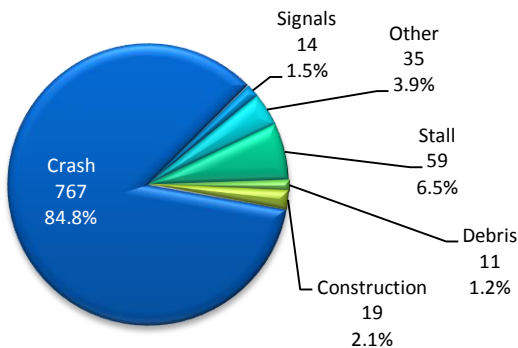
## Operations Summary

VMS Messages Displayed	84,041
Signal Timing Work Orders	43
Signal Maintenance Work Orders	155
All New Work Orders	534
Work Orders Closed During the Month	516
Incident Responses by the TOC	905
Incident Duration Average Minutes	58
IMT Assists	2,188
Website Visitor Sessions	144,635
511 Calls	9,403
Weather Desk Calls	175
Ask Commuterlink Questions	38
Average Speed AM Peak (07:00-08:00)	67.03
Average Speed PM Peak (17:00-18:00)	60.35
Incidents Using Signal Timing Assistance	91
UDOT Traffic Followers and Re-tweets	534,477
UDOT Traffic App Total Downloads	3,516

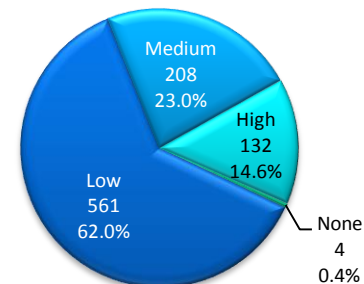
An incident response occurs each time an incident is recorded in the ATMS system. These can be of several types, including crash, construction, debris, stall, congestion, or other. Crashes are separated into three subcategories: property damage, personal injury, and fatal. Each time an incident is created, information is sent to the 511 system, the website, and to the public through email alerts. An incident remains active until it has been completely cleared from the roadway.



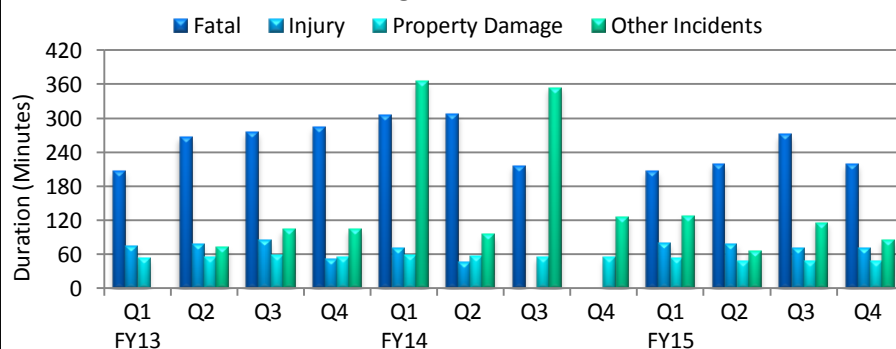
**\*Incidents By Type for August 2015**



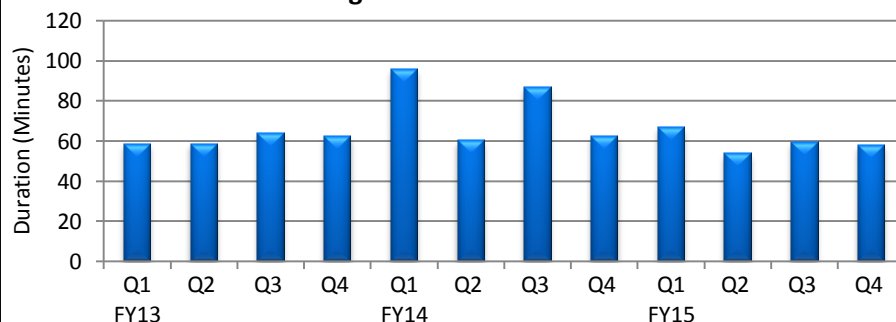
**\*Incidents by Severity for August 2015**



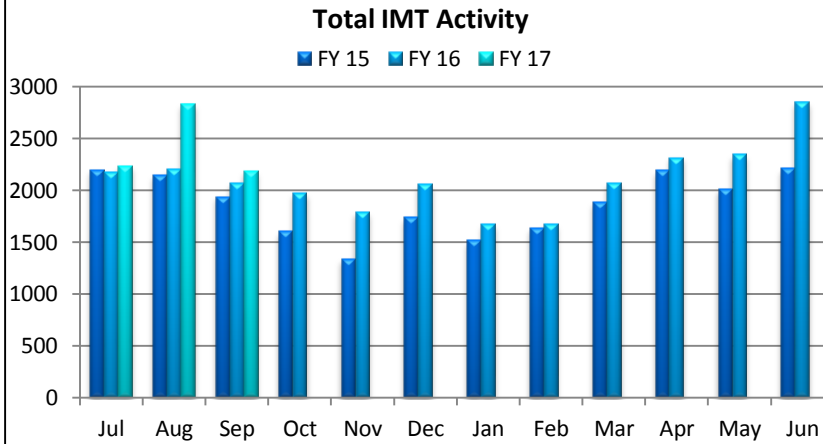
**\*Average Crash Duration**



**\*Average Duration of All Incidents**

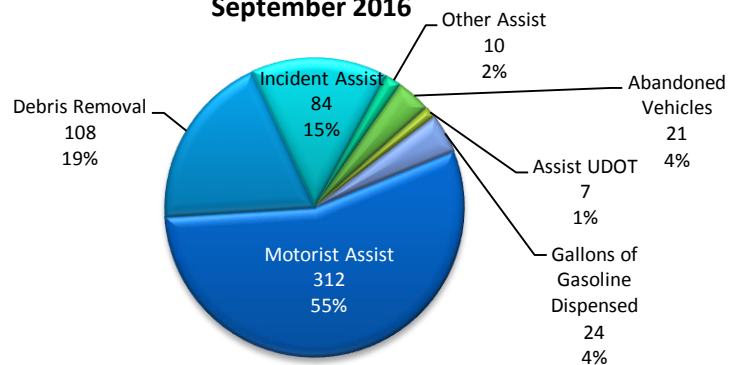


## Incident Management Team (IMT) Activities



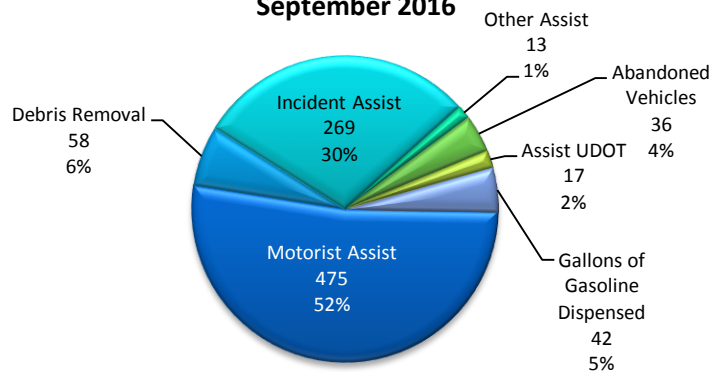
### IMT Activities by Type for UDOT Region 1

September 2016



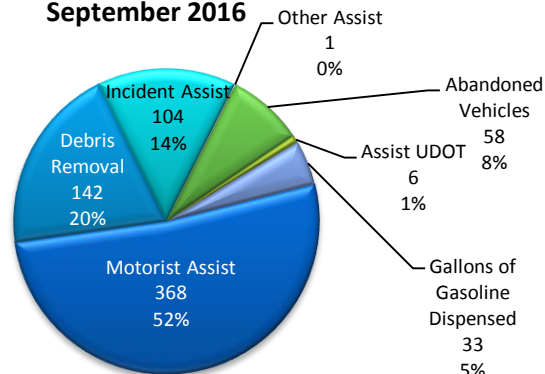
### IMT Activities by Type for UDOT Region 2

September 2016



### IMT Activities by Type for UDOT Region 3

September 2016



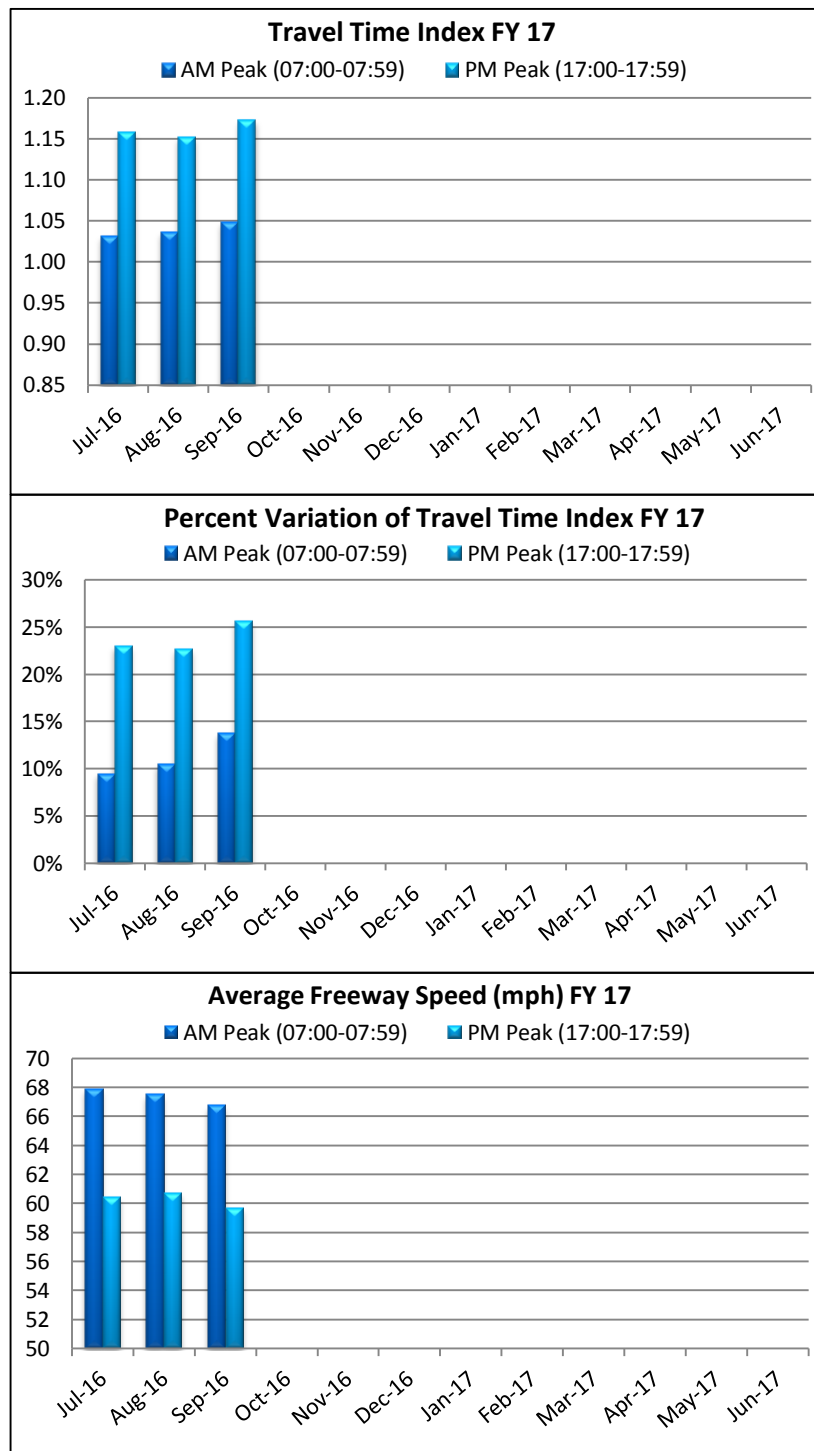
## Freeway Traffic Level of Service

Freeway flow measures are taken from the Traffic Monitoring Stations (TMS) located throughout the Wasatch Front. As more TMS sites are installed throughout the state, they will be included in these performance measures.

**Travel Time Index:** This measure of mobility is based on freeway speeds and is weighted by segment lengths and by the traffic volume. A value of 1.0 represents free-flow speeds. A value of 1.12 indicates that the average vehicle trip takes 12% longer than if that were the only vehicle on the freeway.

**Percent Variation of Travel Time Index:** The percent variation in the Travel Time Index is a measure of how much the Travel Time Index changes from day-to-day.

**Average Freeway Speed:** The freeway speed is weighted by volume.



## Freeway Traffic Level of Service

### Peak Travel Time Index by Segment for September 2016

(+) Direction (NB, EB, Clockwise)

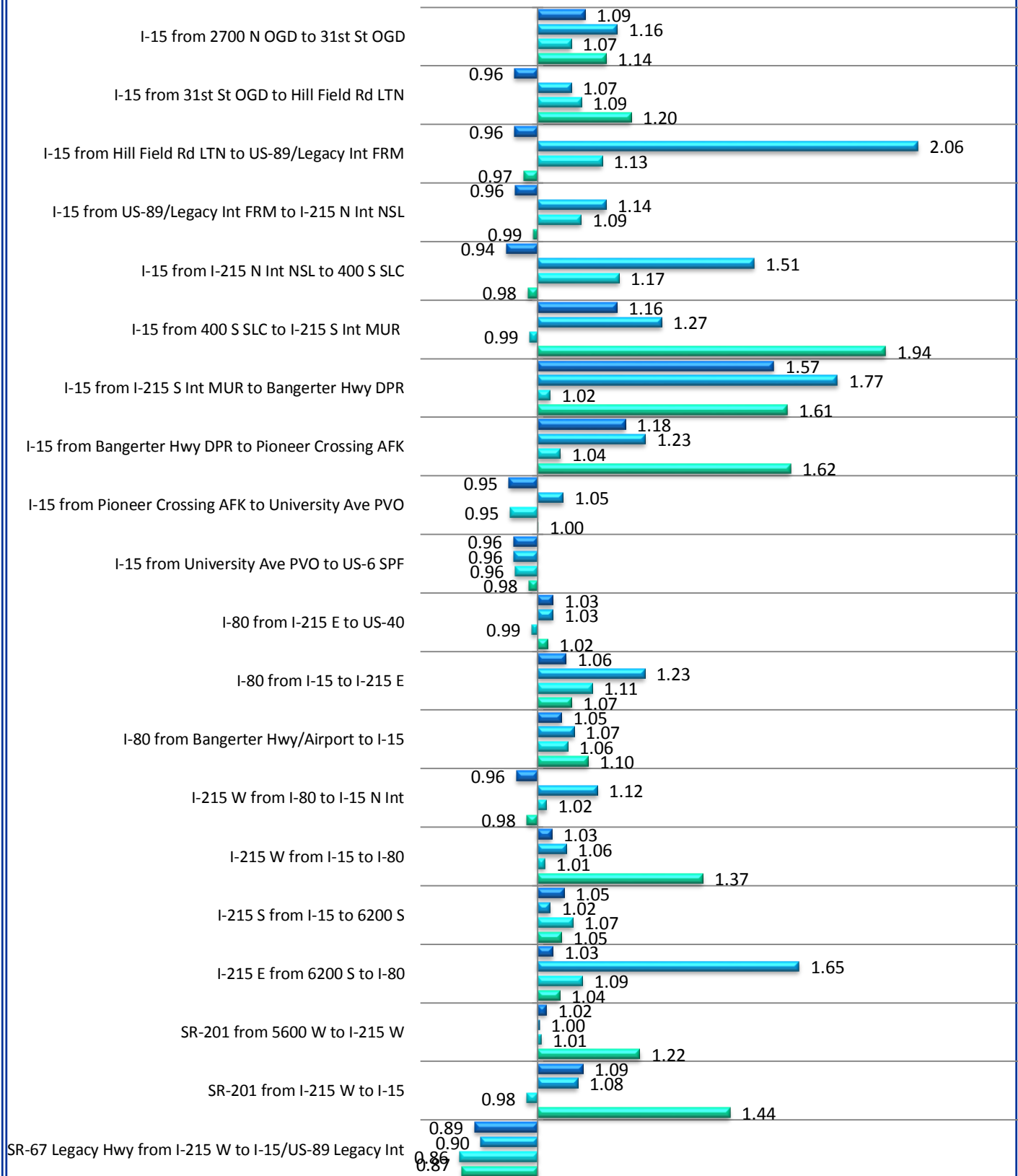
(-) Direction (SB, WB, Counter Clockwise)

■ AM Peak (07:00-07:59)

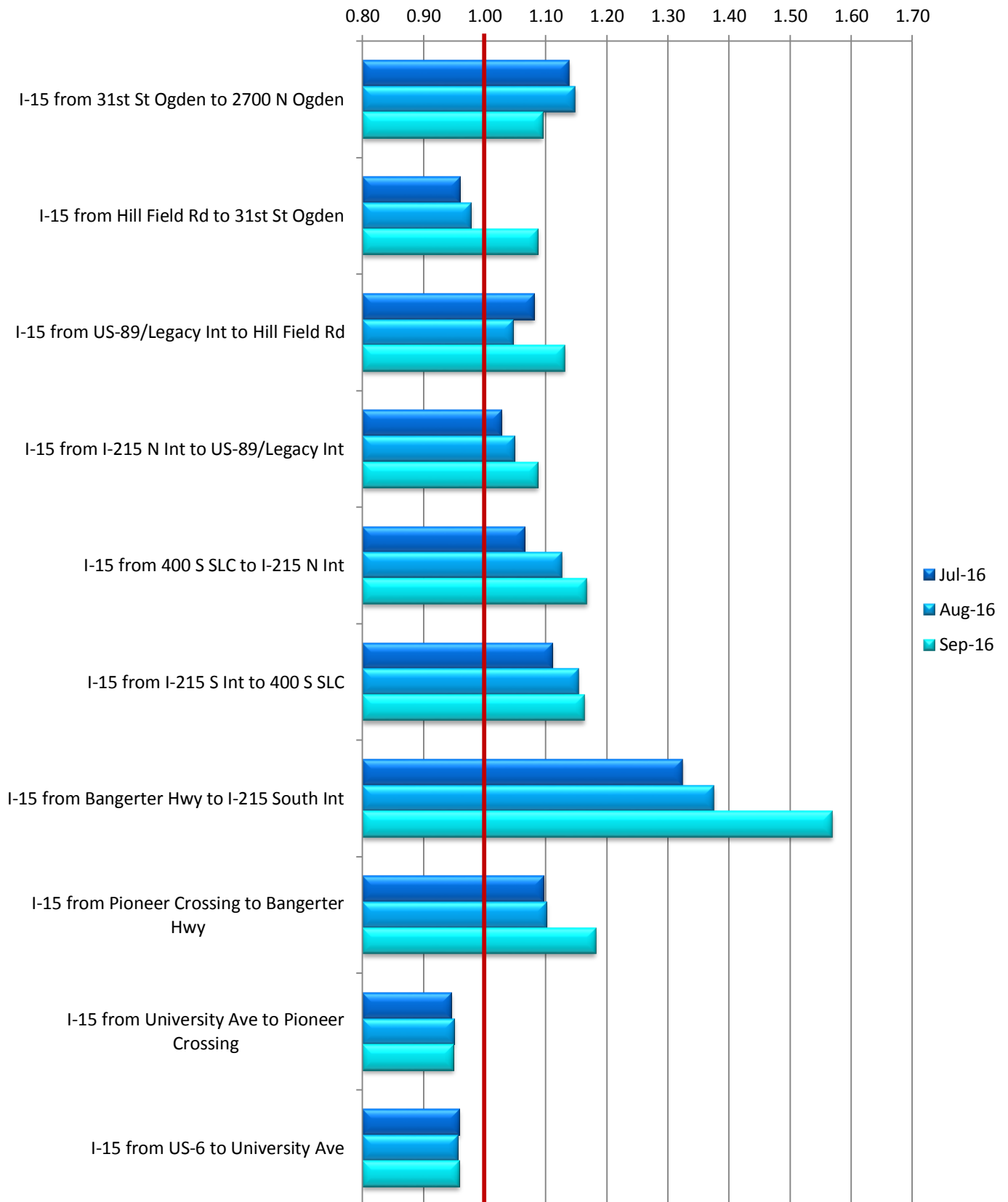
■ PM Peak (17:00-17:59)

■ AM Peak (07:00-07:59)

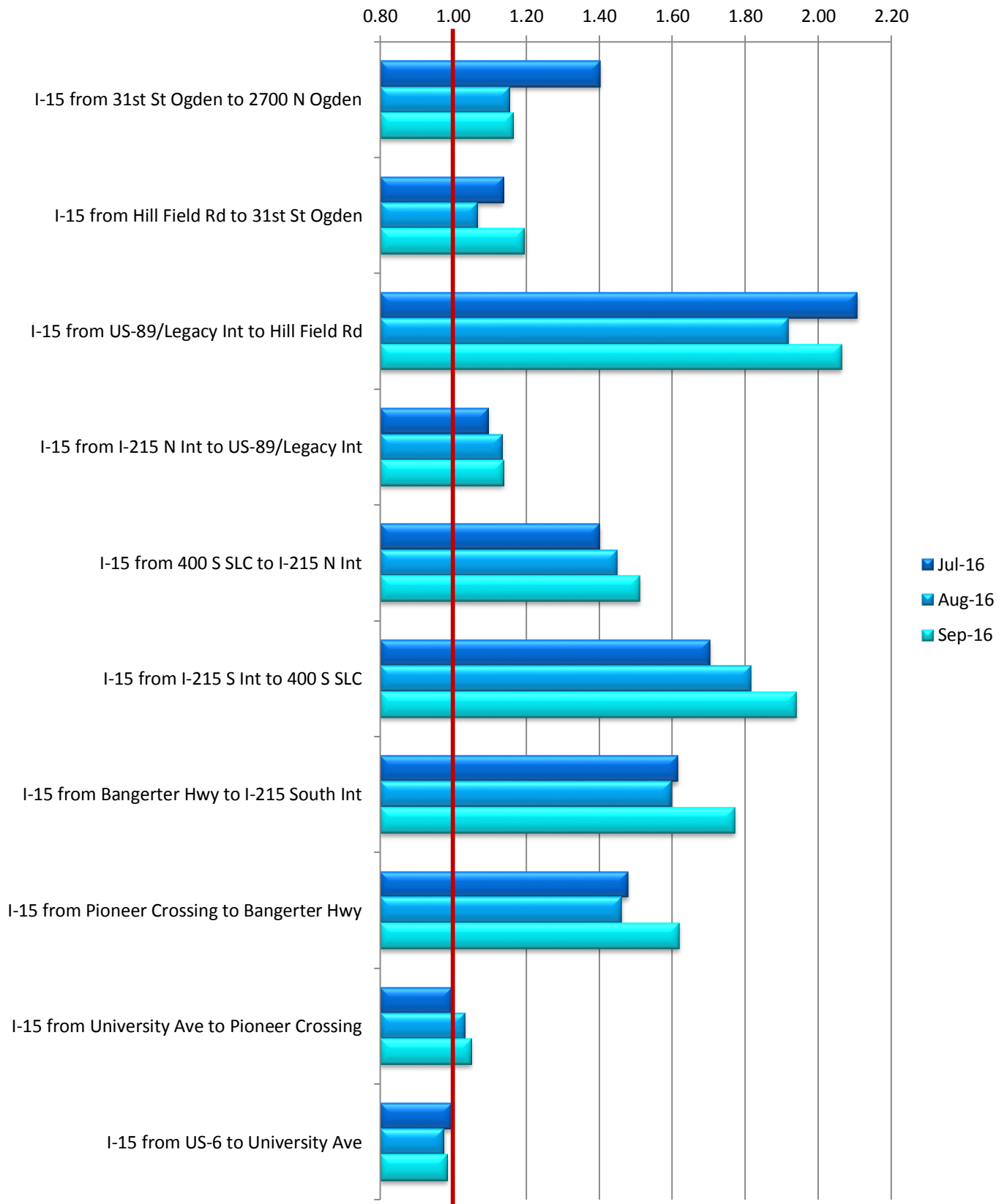
■ PM Peak (17:00-17:59)



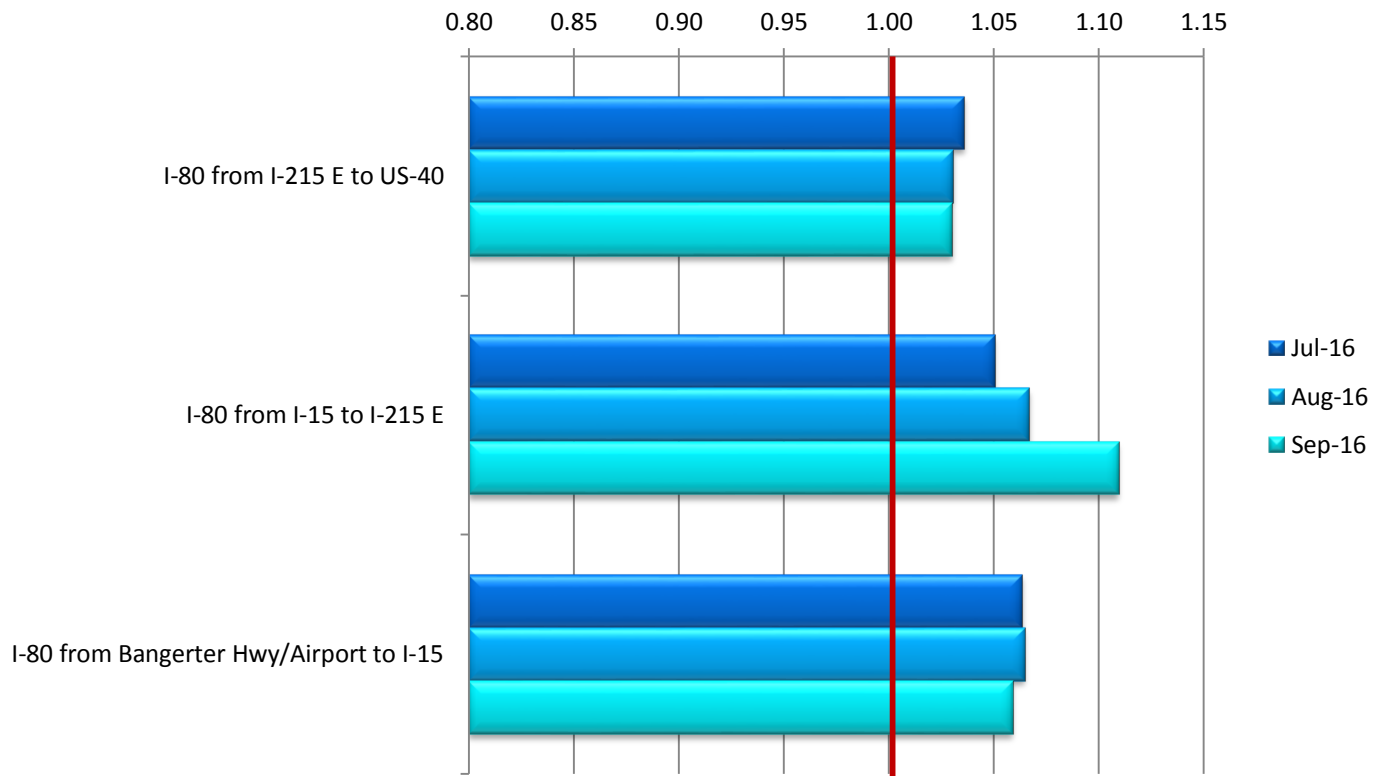
### AM Peak Travel Time Index for I-15 FY 17



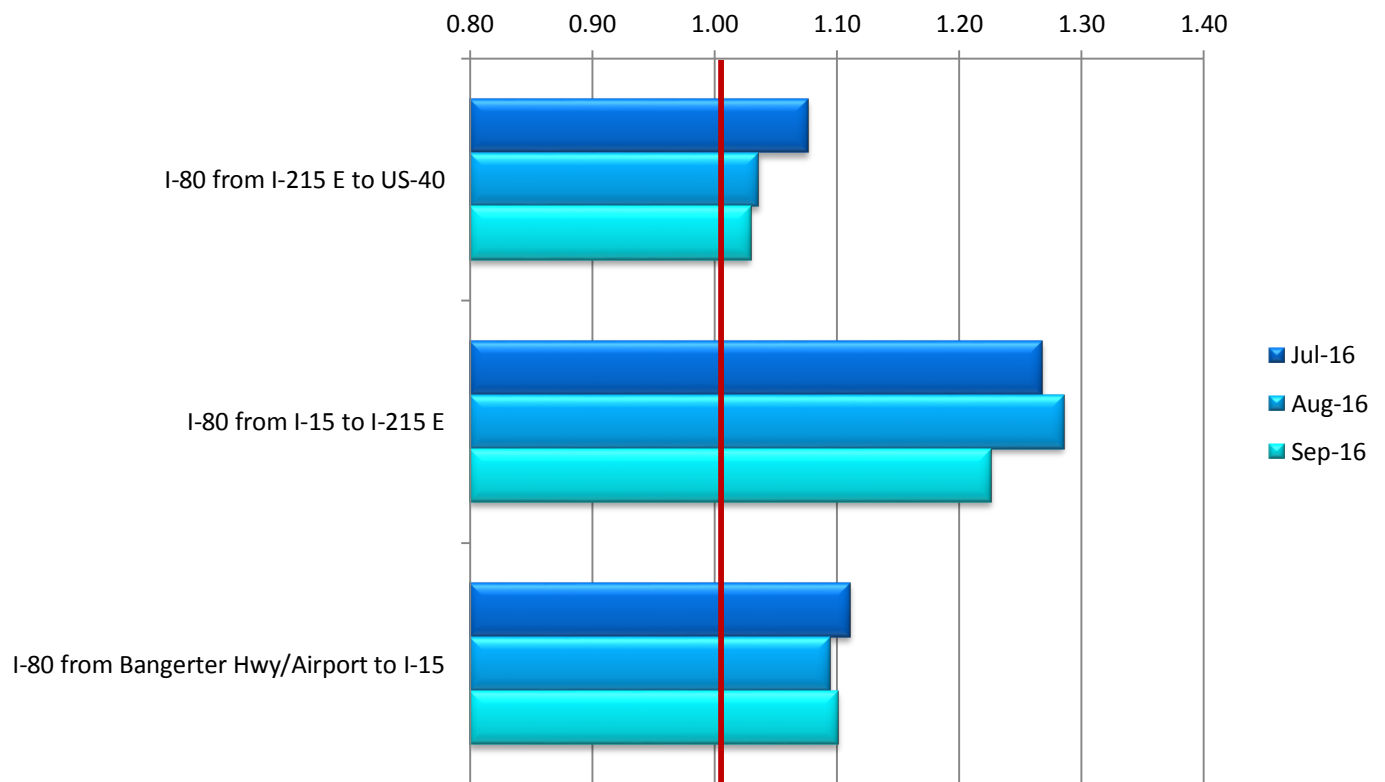
### PM Peak Travel Time Index for I-15 FY 17



## AM Peak Travel Time Index for I-80 FY 17

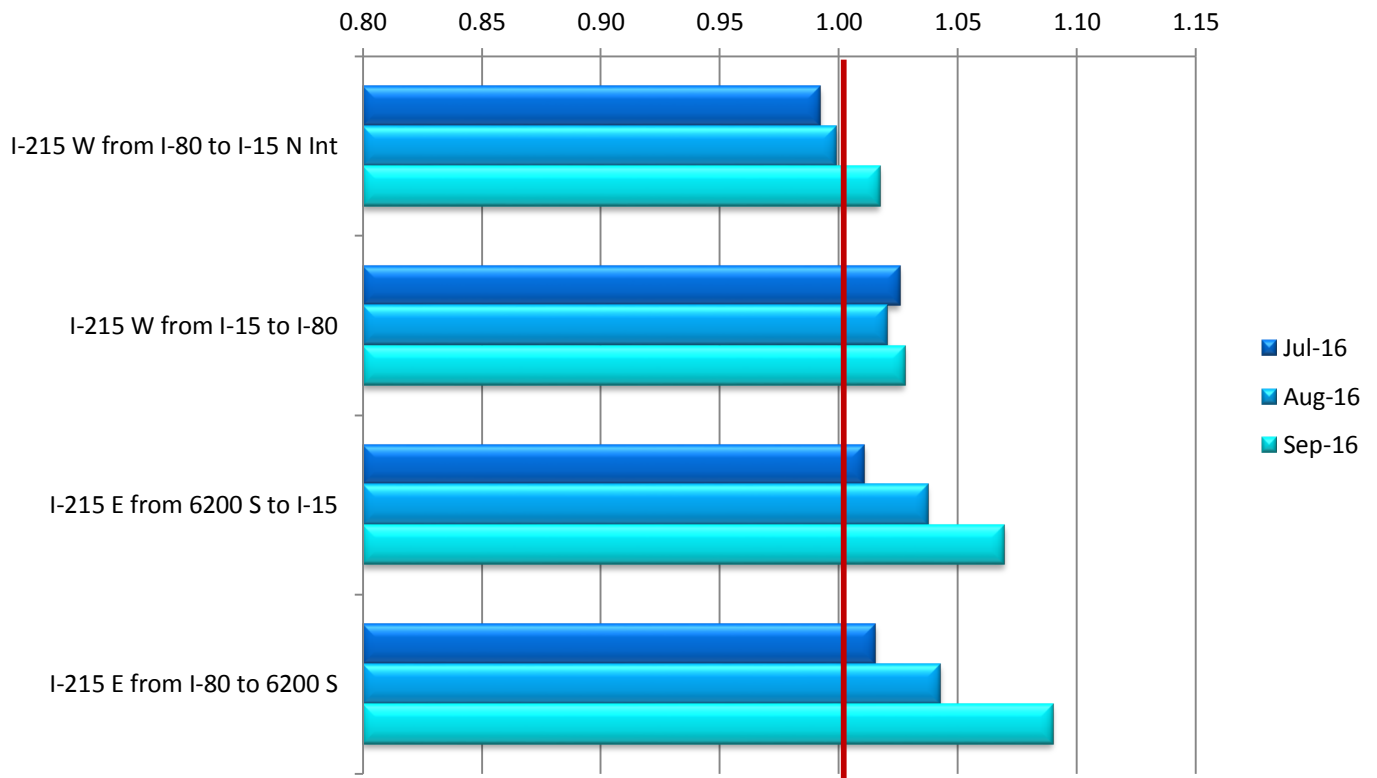


## PM Peak Travel Time Index for I-80 FY 17

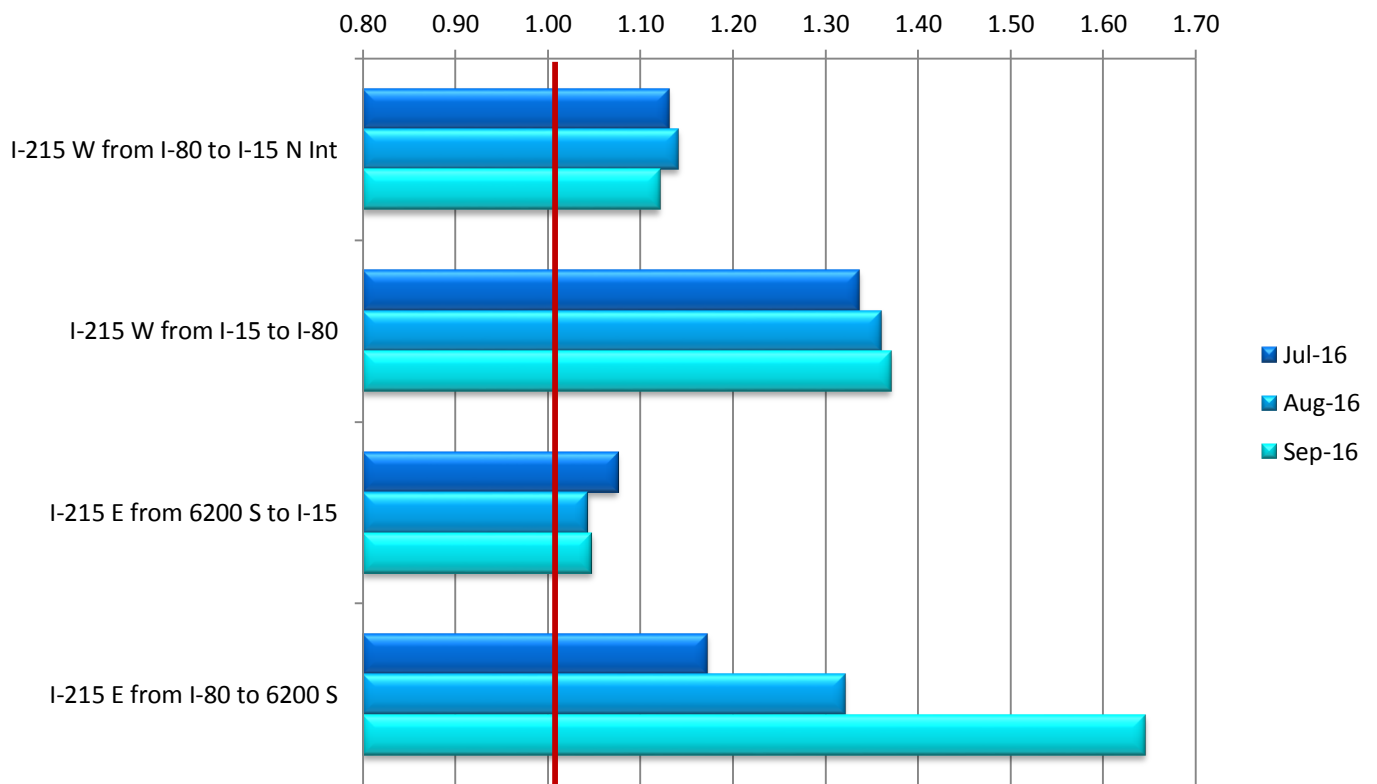




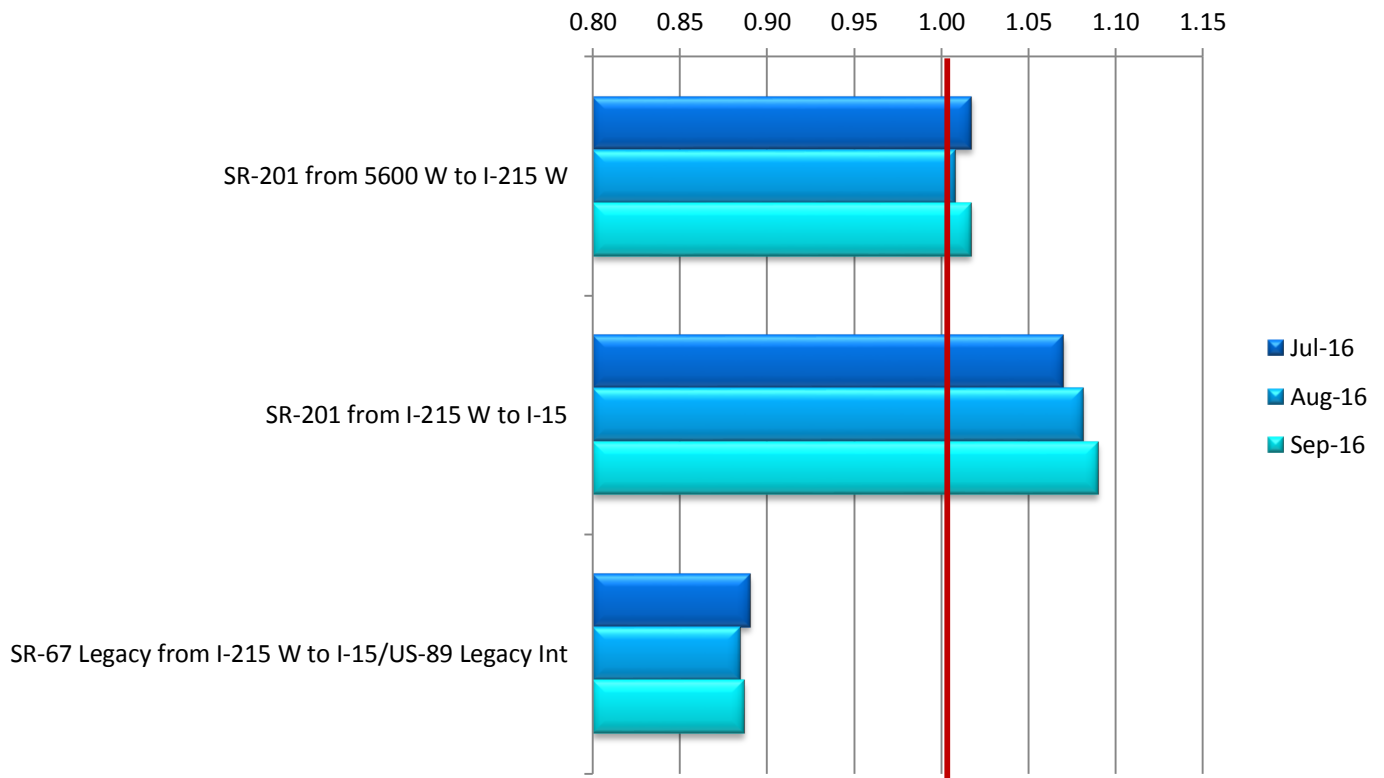
## AM Peak Travel Time Index for I-215 FY 17



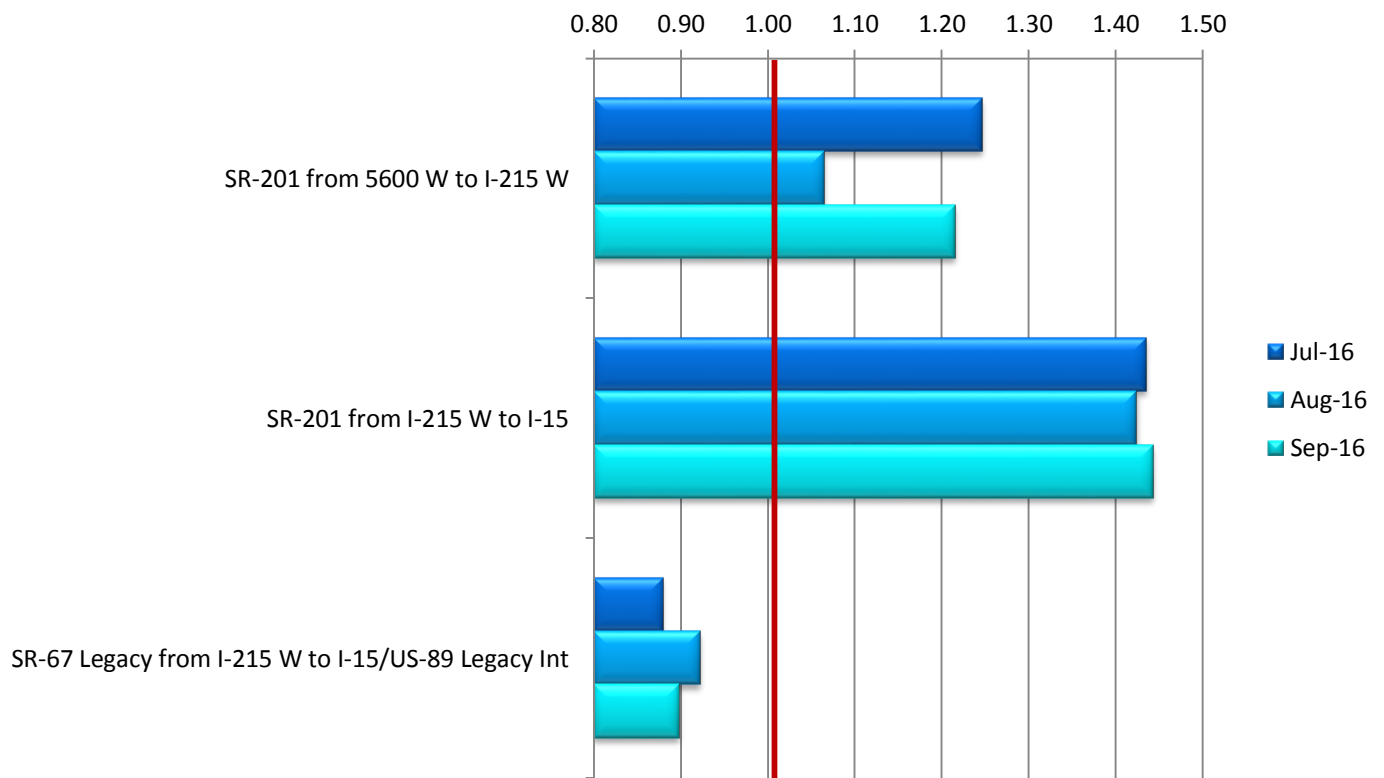
## PM Peak Travel Time Index for I-215 FY 17



### AM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 17

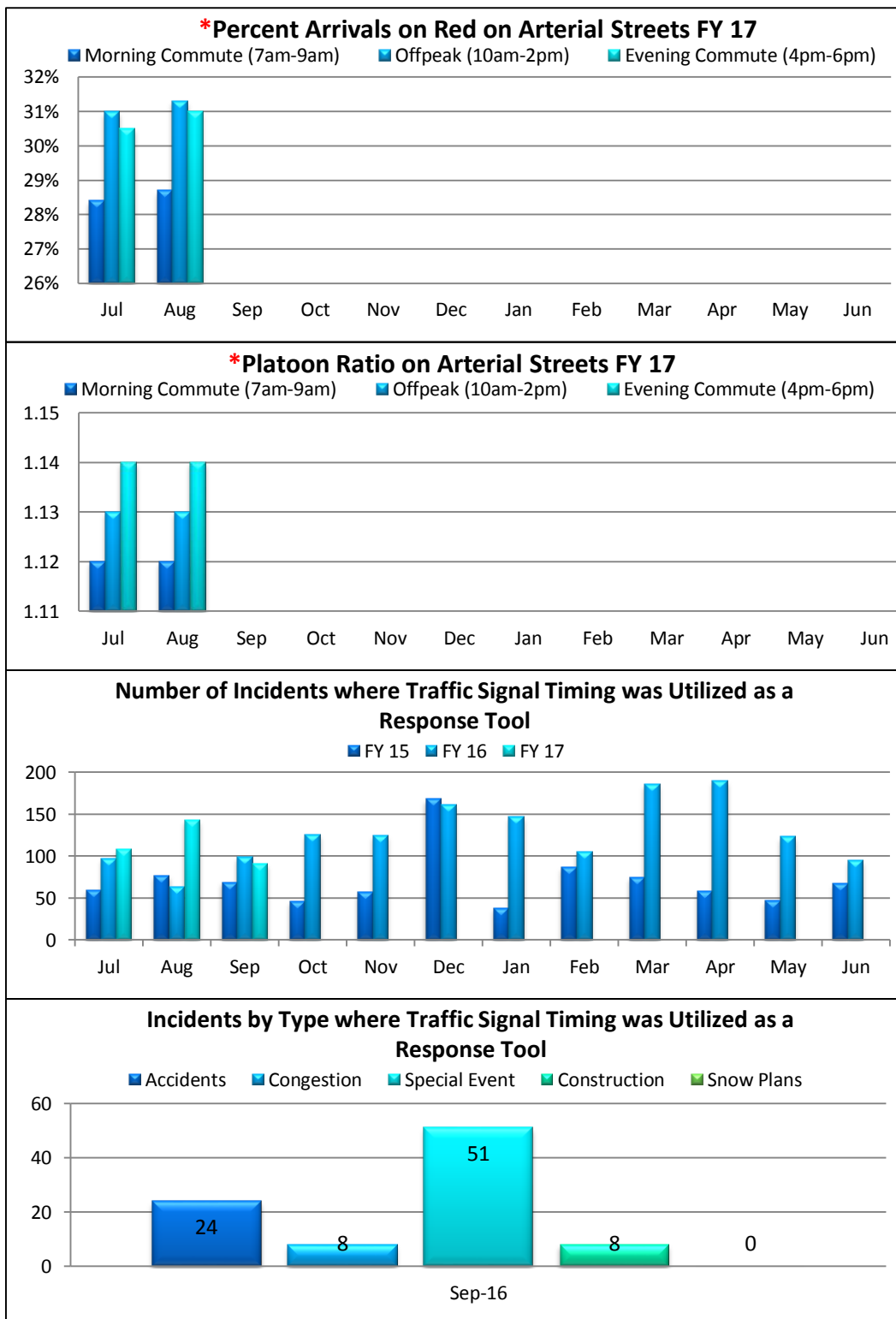


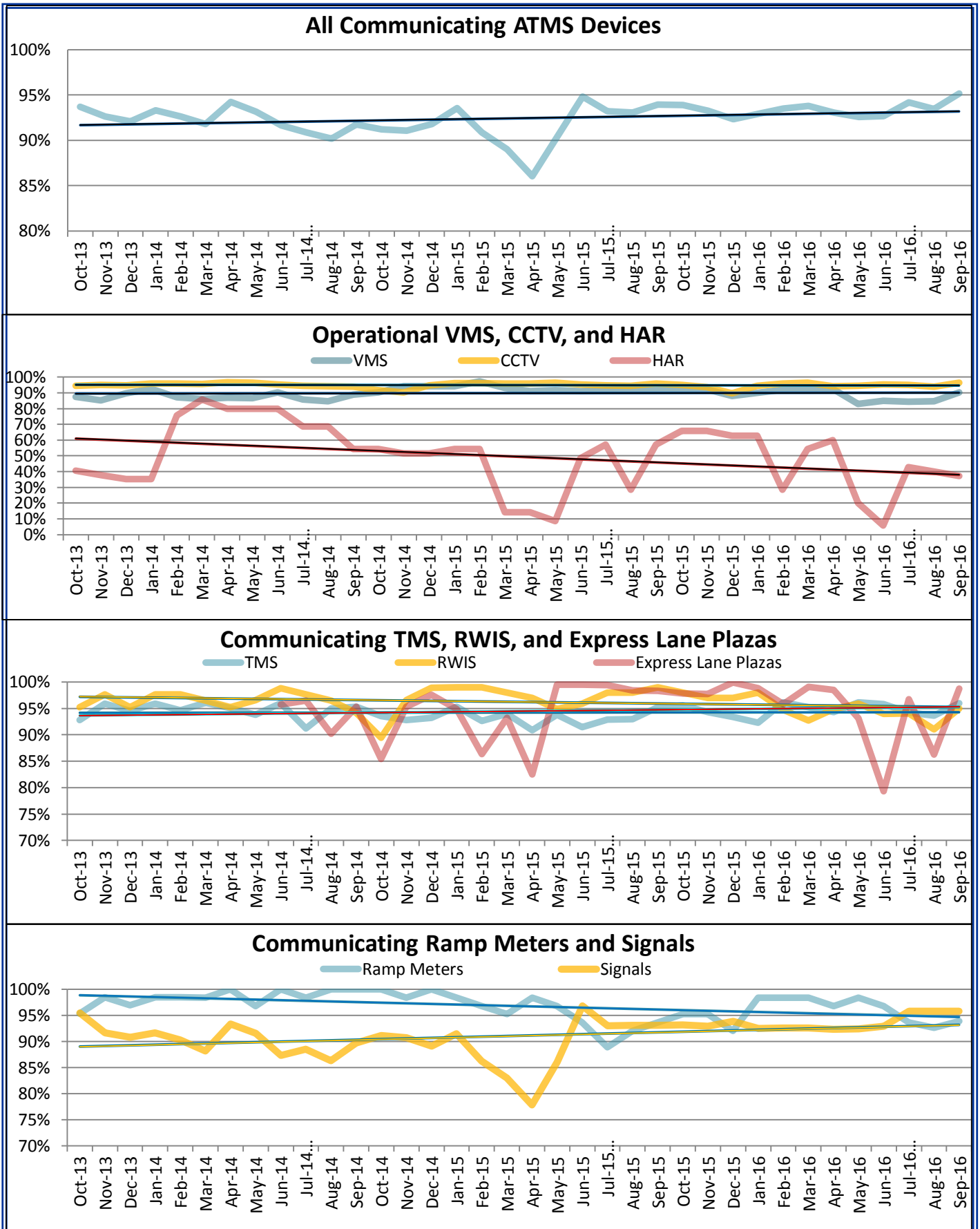
### PM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 17

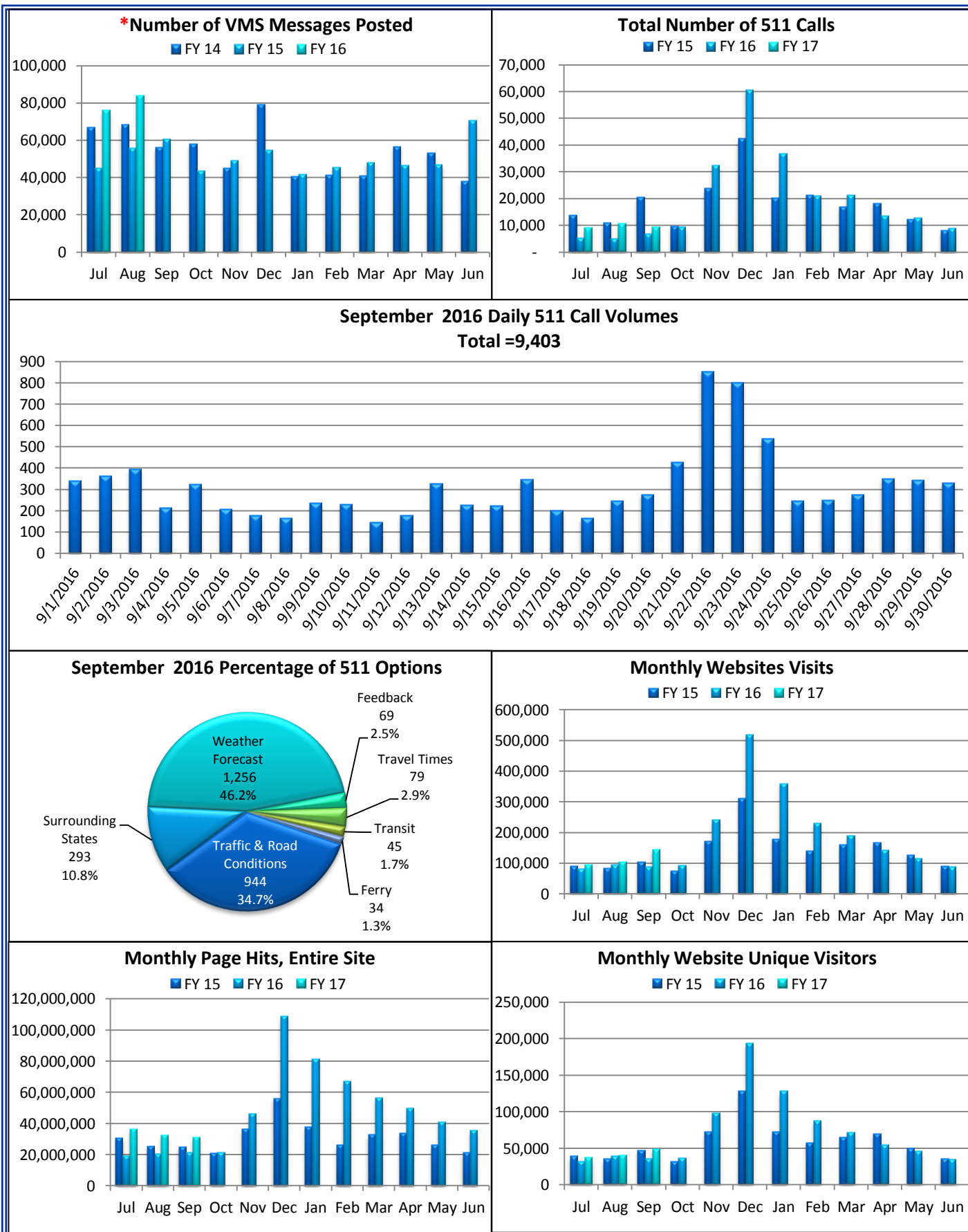


## Arterial Traffic Level of Service \* No data available for Sept 2016

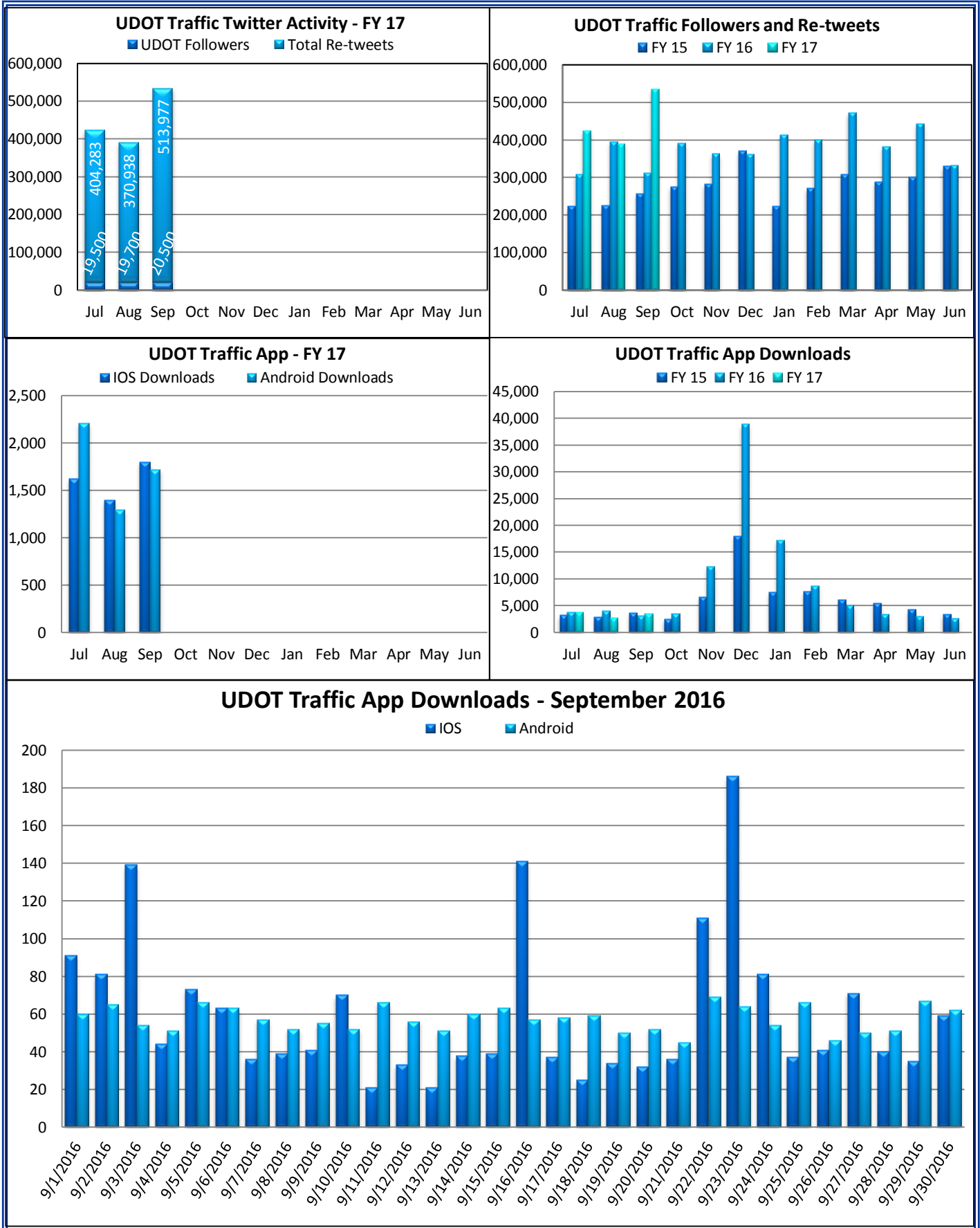
The percent arrival on red along the arterial statistics are generated automatically through the automated traffic signal performance measures, which show real-time and historical functionality at signalized intersections. The system automatically time-stamps when each vehicle arrives at the intersection and then compares the detection time-stamp if the phase was green or red. The percent arrival on red data is averaged over the 24 hours of the day and days in the month. . The lower charts shows the number of incidents where traffic signal timing was modified in order to help traffic flow around closed lanes, or to help relieve excessive congestion.





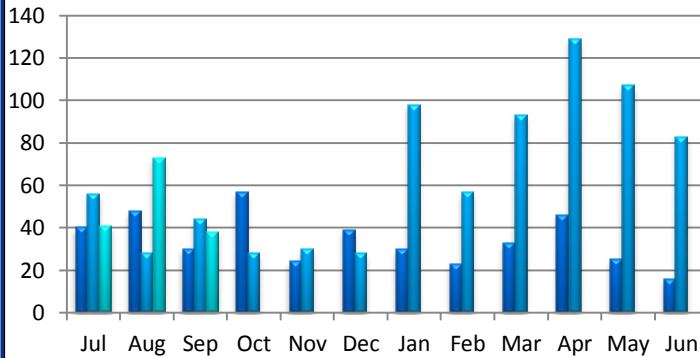


## Social Media



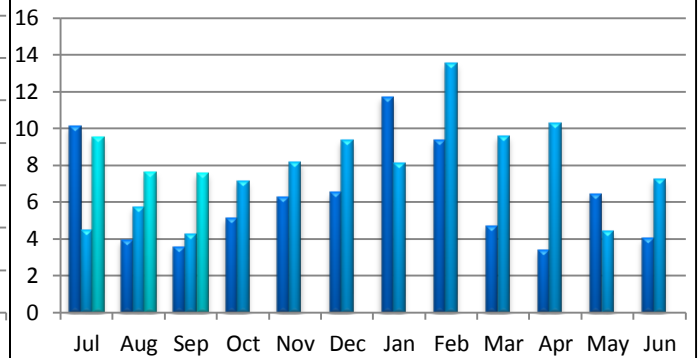
## Number of "Ask UDOT Traffic" Questions

FY 15 FY 16 FY 17

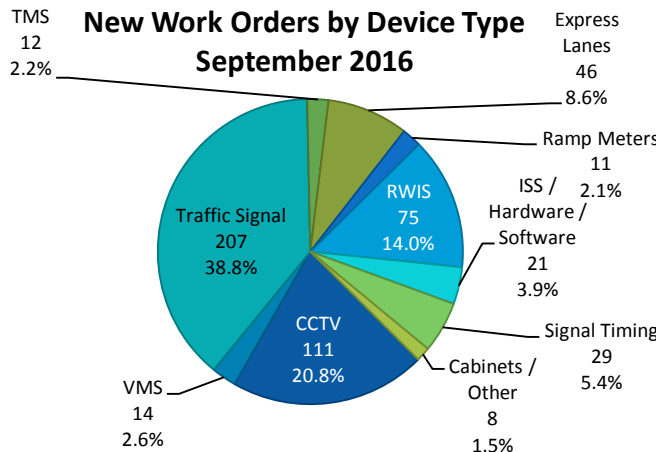


## Overall Average Work Order Turnaround Days

FY 15 FY 16 FY 17

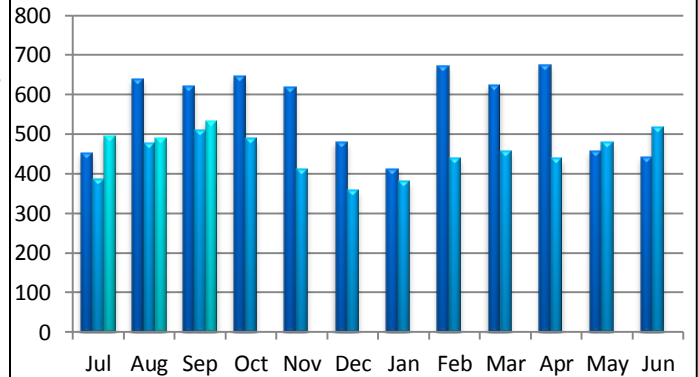


## New Work Orders by Device Type September 2016



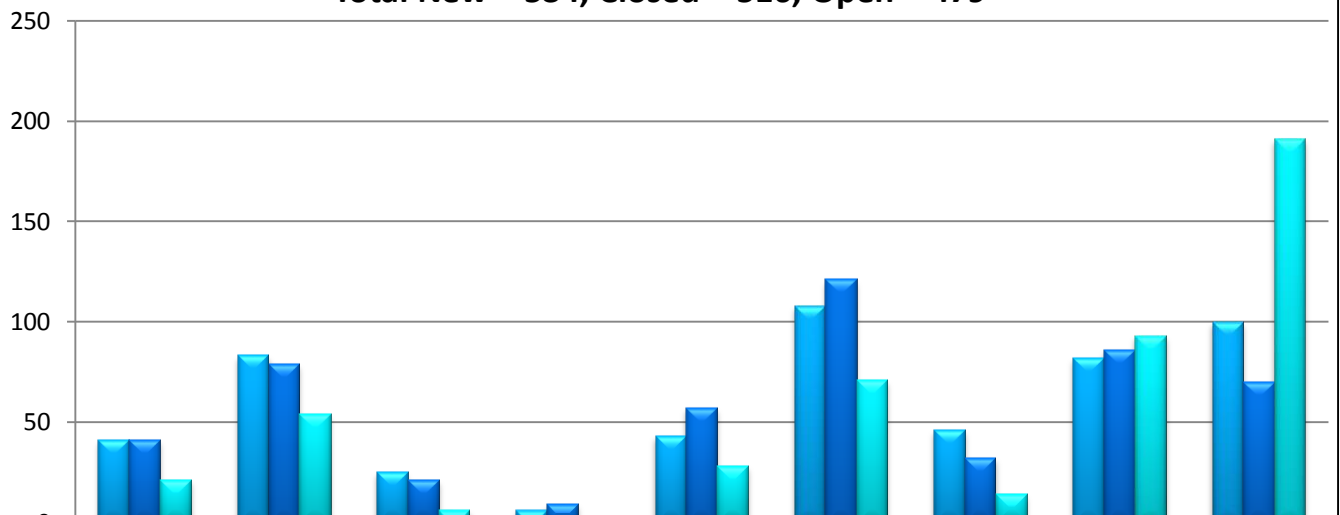
## Number of New Work Orders

FY 15 FY 16 FY 17



## Work Order Statistics by Group - September 2016

Total New = 534, Closed = 516, Open = 479



	R1 Signal Maintenance	R2 Signal Maintenance	R3 Signal Maintenance	R4 Signal Maintenance	Signal Timing	ATMS	Express Lanes	ISS	Other / Engineering / Contractor
New	41	83	25	6	43	108	46	82	100
Closed	41	79	21	9	57	121	32	86	70
Open	21	54	6	1	28	71	14	93	191



### CONTROL ROOM

The Control Room Operators began tracking IMT presence on incidents, incident related lane closures, and clearance times. A new system is tracking air quality alerts to evaluate how to improve the quality of information provided to the traveling public.

The Control Room Standard Operating Procedure manuals are being digitally revised. A new standardized Shift Report is being used by all operators, and step by step instructions are being developed to help in future operator training.

Travis Jensen is a new operator, replacing Paige Sidwell, who recently left the Control Room. Travis will be working the 3<sup>rd</sup> shift.

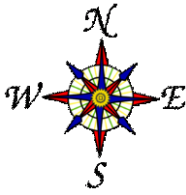


### TRAVELER INFORMATION



Traveler Information represented UDOT at a See-Click-Fix user summit, assisted in staffing the University of Utah command post for football games and represented UDOT for a *Talking Orange* episode regarding special event traffic management. The Traveler Information team also represented UDOT as both moderator and presenter at a nationwide webinar focusing on social media.





### WEATHER INFORMATION GROUP

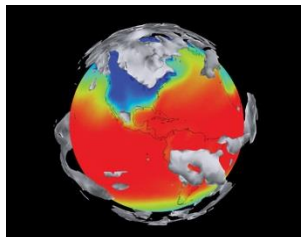
The Weather Group had 145 overall UDOT weather interactions, 61 outgoing weather alerts, three National Weather Service collaborations, and four Road Weather Alerts.

#### Climatology

With the exception of some areas in far western and far eastern Utah, precipitation was above normal for much of the state and well above normal in the Uinta Basin and northwest Utah, mostly due to a significant storm in the second half of September that brought heavy rains and flooding to parts of the state along with two EF-1 tornadoes. One occurring in the Ogden area and one in Panguitch. In a 48 hour period, 5.87" of rain fell at Bruin Point, a 10,200' location in the Book Cliffs about six miles northeast of Sunnyside, with 4.68" falling in 12 hours. (The state record is 6" in 12 hours at Bug Point southeast of Monticello on September 5, 1970). Temperatures remained about normal for the entire state for the month of September.

#### Weather Operations

The Weather Operations group participated in a webinar for the Every Day Counts (EDC-4) Weather Savvy Roads, and conducted one tour of the TOC Weather Room for employees of Forsgren Associates. Preventative maintenance, in preparation for the upcoming winter, began this month.



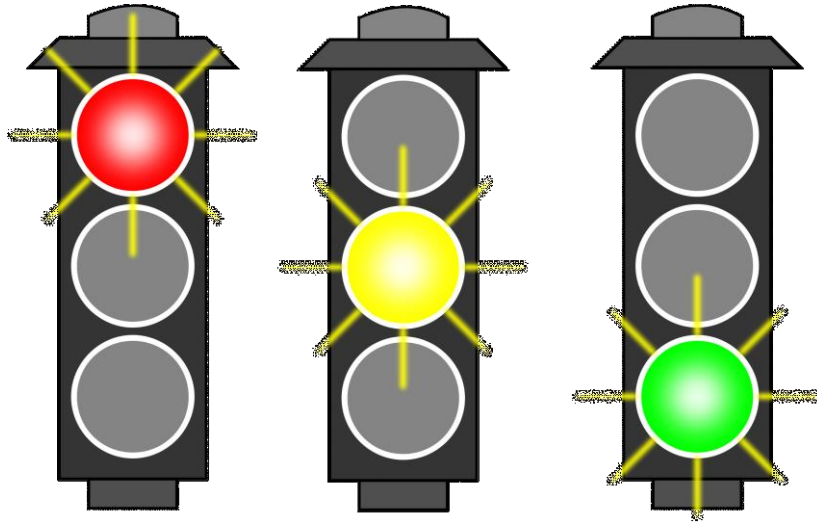
### TRAFFIC OPERATIONS AND REPORTING

- ❖ Bangerter interchange design build project.
- ❖ Lehi Technology Corridor.
- ❖ Logan Y intersection analysis.
- ❖ Asset Management reliability and delay performance metric.
- ❖ Governor's performance metric.
- ❖ MP 8 & 10 interchange analysis.
- ❖ Provo/Orem BRT project support.
- ❖ US-6 corridor analysis.
- ❖ PG Blvd Traffic Impact study analysis identifying needs around the interchange.
- ❖ I-80/Foothill Blvd study.
- ❖ Congestion Reporting.
- ❖ Vineyard Connector sequencing study.
- ❖ Redwood MOT discussion in R3.
- ❖ SR-198 culvert box MOT.
- ❖ Life on State St. study.
- ❖ 10600 South MOT support.
- ❖ SR-9 project support.
- ❖ Redwood Road/I-215 ramp metering discussion.
- ❖ Five interchange study in Region 1.
- ❖ Mountain Accord project support.
- ❖ Presentation at the Georgia ITS meeting on freeway performance metrics.



### ITS ASSET MANAGEMENT

New freeway and weather detection CCTVs were integrated along with a new wigwag VMS. Thirteen traffic detection CCTVs and a surface street VMS were removed. The reporting method for signals has changed to show only those signals that are connected to the TOC, and how well they communicate.



### TRAFFIC SIGNAL OPERATIONS

- ❖ **Region 1** added left-turn phasing at SR-26 on Pioneer Road and rebuilt the Wasatch and Gentile Street signal.
- ❖ **Region 2** completed a new signal at Mountain View Corridor and South Jordan Parkway that includes a bicycle signal and bike path. Assisted the I-15 Point project by shifting traffic to the final traffic pattern on the 14600 South interchange. extended AM and PM signal coordination on Mountain View Corridor.
- ❖ **Region 3** extended peer to peer system coordination at the Springville 400 South SPUI to include the new 2200 West signal; rebuilt the SR-189 / 300 South signal; launched special event timing for BYU football games; and assisted Wavetronix in alpha testing for new device firmware.
- ❖ **Region 4** turned on a new signal at SR-9 and Telegraph; installed an uninterruptable power supply at the Green Springs SPUI; replaced 20 high pressure sodium cobra head luminaires with energy efficient LED fixtures; and installed a school crosswalk switch in Huntington.

### **Major Teaming Efforts**

Lab, field and ETC teamed to perform inspections and LFOTs on The Point Project ATMS devices and infrastructure. Assistance was also provided for toll plaza's PMs on I-15.

### **Field Team**

LFOTs were performed for 13 cameras, two VMS signs, and five ramp meters. This same project also performed the electrical inspections for segments 1, 2 & 3 for the Point Project. LFOTs were performed on I-15 in the Layton area for two CCTVs and two ramp meters. A final inspection was performed on contractor damaged wire, conduit and reconnected CCTVs in South Ogden at 6300 S SR 89. With the assistance of Region 1's Signal Team, the group was able to replace and return to service a CCTV which had been destroyed when a traffic signal pole was damaged by an automobile. Organized by Diane Silcox and Chris Smith the team fixed a SixNet modem problem which appeared to be locked up and took several ATMS devices off-line.

Total closed work orders for September is 105.

### **Lab Team**

Including Digi terminal servers, traffic signal controllers, 2070 controllers, wireless radios, Wavetronix radar and CCTV a total of 27 devices were tested or repaired. Two traffic signal cabinets were tested and burned in as spares for Region 2. The team released one traffic signal cabinet to Hidden Peak Electric for SR-71/ Ft. Union Blvd. Preventative maintenance was performed on 114 TMS locations. Assistance was given to the ATMS field crew to perform LFOTs for 23 CCTVs, 43 non intrusive detectors, two Daktronics VMS signs, seven ramp meters, and four signals intended for the Point Project. Aid was also given to the Express Lanes Team to perform preventative maintenance on Plazas 625, 630, 635, and a lane controller at Plaza 555. The team released four Wanco stationary signs to Cache Valley Electric for Park City locations on SR-224 and SR-248. Support was given to Shed 245 with a vehicle damaged irrigation system control cabinet at I-215 EB/ I-15 South Side.

There are 22 open work orders; 14 which are on hold for loop replacements. Total closed work orders for September is eight.

### **Express Lanes Team**

The Express Lanes team performed one system drive per week. Eight lane controllers were repaired and programmed. The team replaced eight lane controllers, rebooted 15 lane controllers, one laser, one reader and two VTMS. Five pucks were recalibrated and twelve cabinets had preventative maintenance performed. Eight full lane closure preventative maintenance tasks were performed. Two Ethernet relays were installed. David Putnam from the Lab group assisted when extra manpower was needed.

Total closed work orders for September is 355

### Region 1

- ❖ **Statewide Signal Interconnect:** PS&E has taken place. Advertisement is eminent.
- ❖ **US-60 and 2700E:** In design.
- ❖ **SR-232 Hillfield Rd. Interchange:** Under construction.
- ❖ **30<sup>th</sup> Street and Harrison:** Under construction.
- ❖ **650 N. I-15 Clearfield:** Under construction, integration in process.
- ❖ **I-15; SR-30 to the Idaho State line:** This project may be part of a partnership with Telecom.
- ❖ **Layton Interchange:** This project is in design.
- ❖ **32<sup>nd</sup> Street and US-89:** Integration in process.
- ❖ **Antelope and Main:** Integration in process.
- ❖ **Sardine Canyon US-89 from Brigham to Wellsville:** In design.
- ❖ **US-89; Antelope Drive Extension:** Construction complete, integration in process.

### Region Two

- ❖ **I-15 Point Project:** The Design-Build team subcontractors, UDOT and DTS staff worked hard to meet a major milestone in the project. Several new devices needed to be integrated, and final project punch list field work needed to be inspected, completed, and verified. A significant fiber splice had to be completed with minimal disruption to service. Although a few items cropped up in the final stages, everyone planned, communicated, and executed in a strong, cooperative effort to address issues promptly. Once substantial completion occurs next month, the TMD's independent support consultant will complete the Toll system commissioning tests to certify that proper execution of tolling functions are restored.
- ❖ **Salt Lake Valley Traffic Signal Interconnect:** In a rush to be ready for the Utah Football Games, Region 2 team was able to add cellular modems to two remote traffic signals on the North Campus Drive area. These were now even more crucial to establish communication to these signals to support the modified parking dispersion plan for this year's football games.
- ❖ **Fiber Optic Conduit By-Pass System Development:** A new method to consolidate fiber system conflicts and streamline their paths into distinct, co-located ducts was installed as an emergent modification to the 900 East (SR-71) & Ft. Union intersection in Midvale. After massive intersection construction and excavation and lack of adequate fiber slack rendered the initial plan in peril, the modified splice placement allowed us to keep the existing fiber intact, but putting it at significant risk in the event of a break. While the intersection was still excavated, we worked with the contractor to install a conduit and junction box by-pass ring, partially, around the intersection to enable ease of reinstalling future fiber to the splice point without disturbing the surrounding signal wires, and other utilities, as well as the sidewalk area flatwork and business landscaping. This concept will become more prevalent to mitigate the rapidly growing UDOT and private telecommunication providers get in, through, and around our intersections that are crowded with a myriad of utilities.

### Region 3

- ❖ **SR-92 CCTV/Hybrid VMS (12641):** Project complete. Moved into closeout.
- ❖ **Region 3 traffic signal connections (12774):** SR-198 @ Woodland Hills CCTV, SR-198 @ 400 North, and SR-198 @ Main St CCTV in Salem via wireless radio connection. Project complete. Moved into closeout.
- ❖ **US-40 CCTV/Signal connections (12805):** STRATA installed connection electronics to eight signals in the basin area. Due to issues with STRATA links, hub switch installation re-scheduled for August. Network connection complete. CCTV's connections pending.
- ❖ **US-189; State Park to Rock Cut passing Lanes (11415):** Project under construction. Power disconnect installation change order complete.
- ❖ **Spanish Fork; SR-156; 300 South to M.P. 2 (9976):** Project under construction. CCTV failure due to power breaker faulty wiring. CCTV reinstalled. Started 30 day burn-in.
- ❖ **Provo; SR-256; 800 East to Univ Ave BRT (10266):** ATMS design of micro fiber and two CCTV's ongoing. Project under construction.
- ❖ **Spanish Fork; Canyon Rd @ 2550 E Signal (10960):** Project under construction.
- ❖ **Provo; US-89 (300 S); 100 East to 700 East (10137):** Project under construction. Temporary fiber dig up repaired.
- ❖ **Ut. Co. Signal Interconnect (13244):** Project awarded.
- ❖ **I-15 Fiber; Payson to Santaquin (14149):** Hired designer.
- ❖ **Pleasant Grove; US-89 @ 200/220 South (14683):** Project under construction.
- ❖ **Highland; SR-92 @ 6400 West Signal (14595):** Project under construction. Continue 30 day burn-in.
- ❖ **American Fork; US-89 @ Main St./200 East (13061):** Project in design.
- ❖ **Payson; 1400 South State St (SR-198):** Signal/CCTV (14573) – Held PS&E.
- ❖ **Highland; SR-129 @ 1100 North Signal/CCTV (14955):** Project in design.



### Region 4

- ❖ **St. George:** This project is complete, except for some city and UDOT fiber coordination. Pinetop is in the process of integration.
- ❖ **Salina VMS and Fiber:** Under construction. Punch-list items are being mitigated.
- ❖ **Fiber upgrade for US-6, Helper and Price Signal Integration:** This project is in process for solicitation through Procurement Services On-line.
- ❖ **I-70 in Richfield:** In design.
- ❖ **Cedar City Fiber:** Under construction.
- ❖ **Beaver Shed and Fiber HUB:** Under construction.
- ❖ **Arches CCTV:** This has been completed and is in 30 day burn in.
- ❖ **Bryce Signal:** The contractor is looking into the splicing and construction details.



### ITS Standards and Specifications

Time was dedicated to review and provide either comments or No Comment to the other Standards groups with a large number of revised Standards to review.

Work continued finalizing the Freeway Management portion of the AT Series Standard Drawings and Specifications, and the RWIS-ESS Standards to be submitted at the Standards Committee for approval on October 27. Work to revise the Polymer Concrete Junction Box Drawing AT 7A and Specification 13554 continued and this will also be submitted to the Standards Committee for approval on October 27.

### Special Projects:

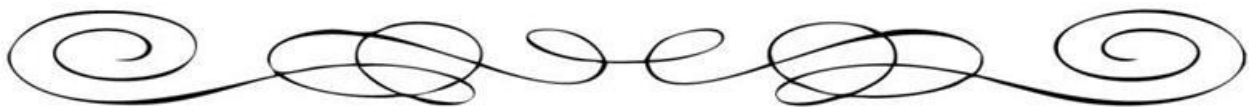
A consultant selection meeting was held for the design of the Region 2 Metro Area VMS at three locations. This selection was a PLOQ process. After a lengthy discussion, H.W. Lochnar Inc. was selected for the design work.





## **Congratulations!!**

Chuck Felice received his 10 Year Service Award from Rob at the staff meeting in September.







### Acronyms

<b>CCTV</b>	Closed Circuit Television	<b>DPS</b>	Department of Public Safety
<b>EIS</b>	Emergency Information System	<b>HAR</b>	Highway Advisory Radio
<b>I2TMS</b>	Integrated Interagency Traffic Management System		
<b>ITS</b>	Intelligent Transportation System	<b>LFOT</b>	Local Field Operations Test
<b>MIC</b>	Manager in Charge	<b>MOT</b>	Maintenance of Traffic
<b>RWIS</b>	Road-Weather Information System	<b>TAC</b>	Technical Advisory Committee
<b>TMD</b>	Traffic Management Division	<b>TMS</b>	Traffic Monitoring Station
<b>TOC</b>	Traffic Operations Center	<b>VMS</b>	Variable Message Sign

